Pediatric Environmental Health Specialty Units

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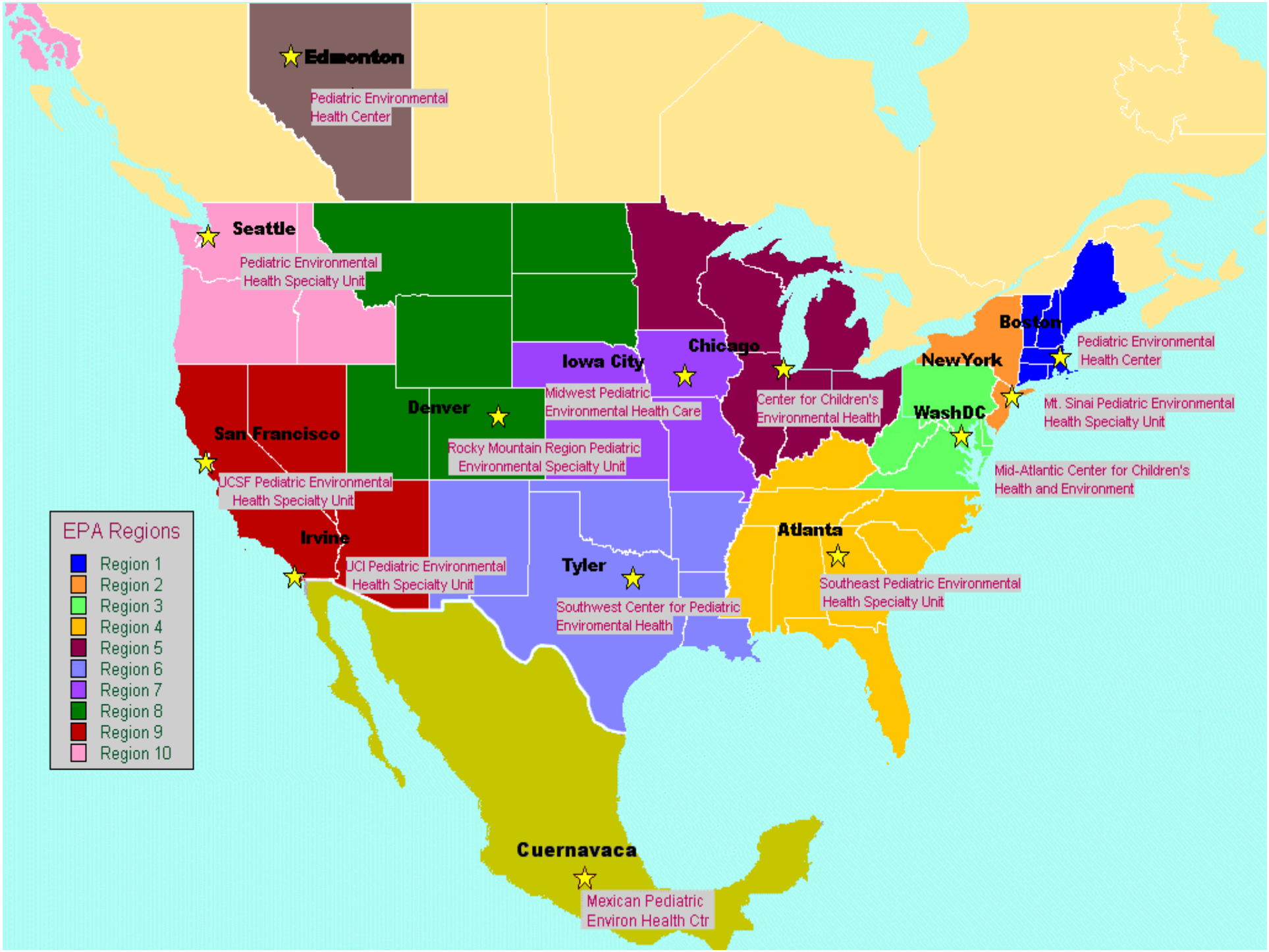
Co-Director

SW Center for Pediatric Environmental Health

The University of Texas Health Center at Tyler

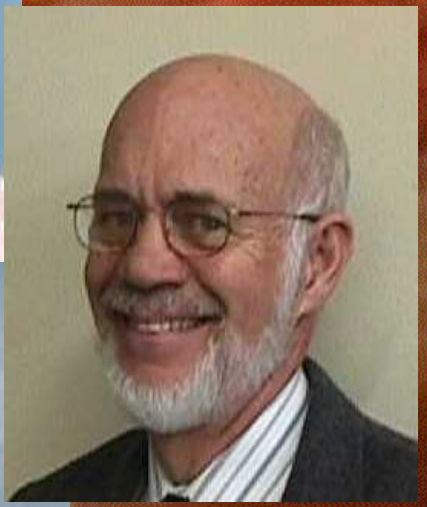
The Facts

- One of 13 centers in the US, Canada and Mexico
  - SW-CPEH funded by AOEC through a cooperative agreement with ATSDR and EPA
- Coverage: EPA VI


Edmonton
Pediatric Environmental Health Center
Seattle
Pediatric Environmental Health Specialty Unit
Iowa City
Chicago
Midwest Pediatric Environmental Health Care
Center for Children's Environmental Health
Boston
Pediatric Environmental Health Center
NewYork
Mt. Sinai Pediatric Environmental Health Specialty Unit
Denver
Rocky Mountain Region Pediatric Environmental Specialty Unit
WashDC
Mid-Atlantic Center for Children's Health and Environment
San Francisco
UCSF Pediatric Environmental Health Specialty Unit
Irvine
UCI Pediatric Environmental Health Specialty Unit
Tyler
Southwest Center for Pediatric Enviromental Health
Atlanta
Southeast Pediatric Environmental Health Specialty Unit
Cuernavaca
Mexican Pediatric Environ Health Ctr
EPA Regions
Region 1
Region 2
Region 3
Region 4
Region 5
Region 6
Region 7
Region 8
Region 9
Region 10

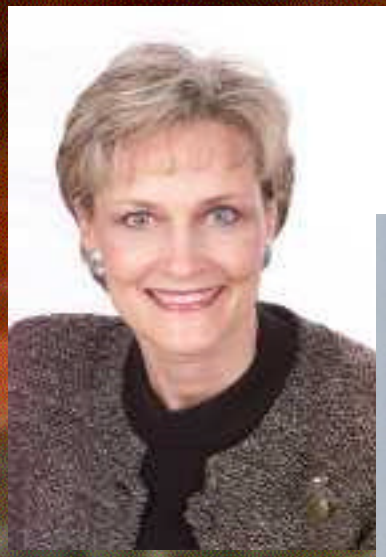
Our Tyler faculty

- Co-Directors
  - Jeff Levin, MD, MSPH
  - Larry Lowry, PhD
- Medical consultant
  - Debra Cherry, MD, MS



Pediatrics

- Barbara Huggins, MD
- Rodolfo Amaro, MD
- Vickie Butler, MD



Our other partners

- Texas Poison Centers
- North Texas Poison Center
- West Texas Regional Poison Center
- The NM Poison Center
- UNM Occupational Environmental Health Program
- Arkansas Department of Health

Goals

- Bridging the gap between the pediatric health care provider and environmental health specialist to serve children impacted by environmental exposures to potentially toxic agents.

Our mission

- Develop and present educational programs to pediatric health care providers and public health officials;
- Provide telephone consultation to health care professionals, public health officials, and the general public.

SW Center for Pediatric Environmental Health

Contacts

Tyler and nationwide (24/7)

903-531-0830

Region VI - 1-888-901-5665

E-mail: swcpeh@uthct.edu

Fax: 903 877-7982

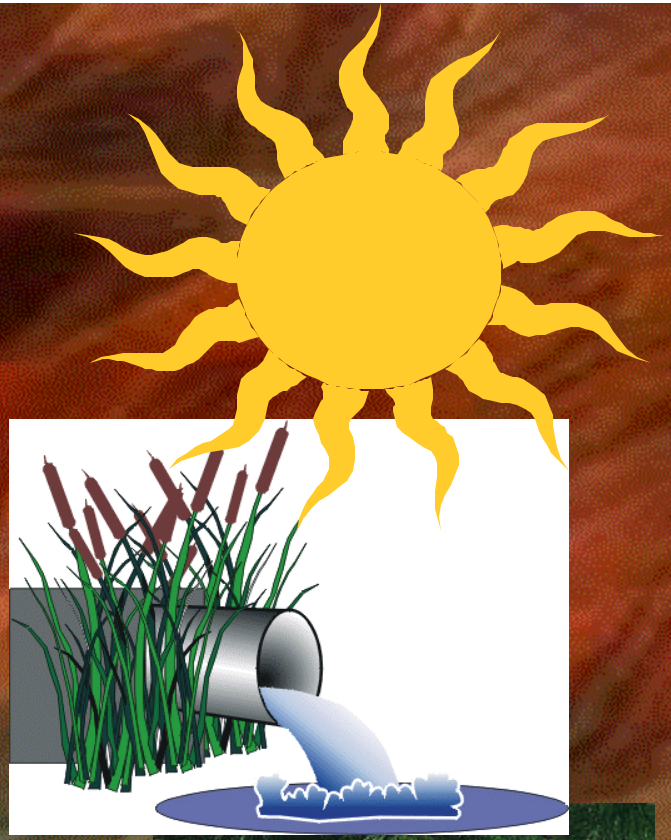
Web URL:

http://research.uthct.edu/swcpeh

Where do children spend their time?

- Indoors
  - At home or school
  - At school, social or sporting events
- Outdoors
  - Family outings, shopping
  - Playgrounds, yards, sporting events
  - Goofing off or at play

Outdoor Exposures



- UV from sunshine
- Contaminated water
- Pesticide exposures
- Contaminated soils
- Hazardous waste

Air Pollution

- Autos, trucks, boats,
- Garbage incinerators
- Power plants
- Industrial plants

Most Exposure Occurs Indoors

- More than 80% time indoors
  - At home and school
  - At events such as school functions, church, etc.

Unique susceptibility of children to indoor air pollution

- Activities: Most time is spent indoors: infants-home, older children-school
- Behavior: Breathing zone near ground level, toddlers touch and mouth surfaces
- Physiology: Developing nervous system, brain, lungs, and reproductive system - increased vulnerability to toxic insults

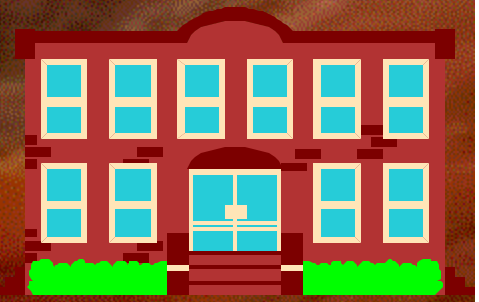
Indoor Exposures

- Chronic health effects
  - ETS
  - Asbestos and radon
  - Lead
- Acute health effects
  - Irritant and toxic gases
  - Allergens and infectious agents

The caregiver & the patient

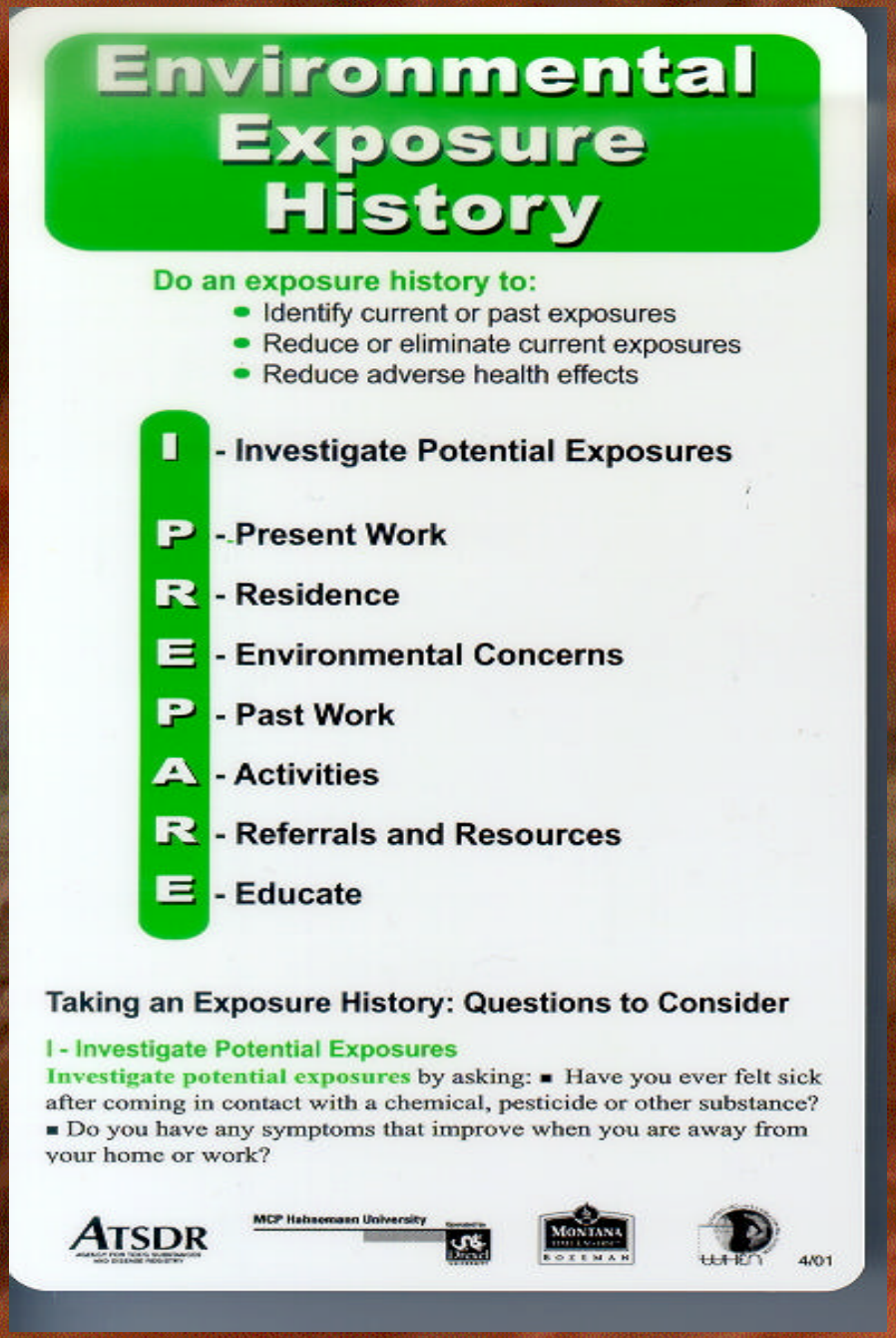
- Traditional illness - the patient
  - One on one relationship
- Environmental illness - the community
  - More than one “victim”
  - What is the source of exposure?
  - Public health prevention role

School nurse as epidemiologist



- Identify symptoms in impacted students compared to “controls” in other parts of the building
- Identify the area in the building with the problem
- Attempt to identify the causative agent

The exposure history a new from ATSDR

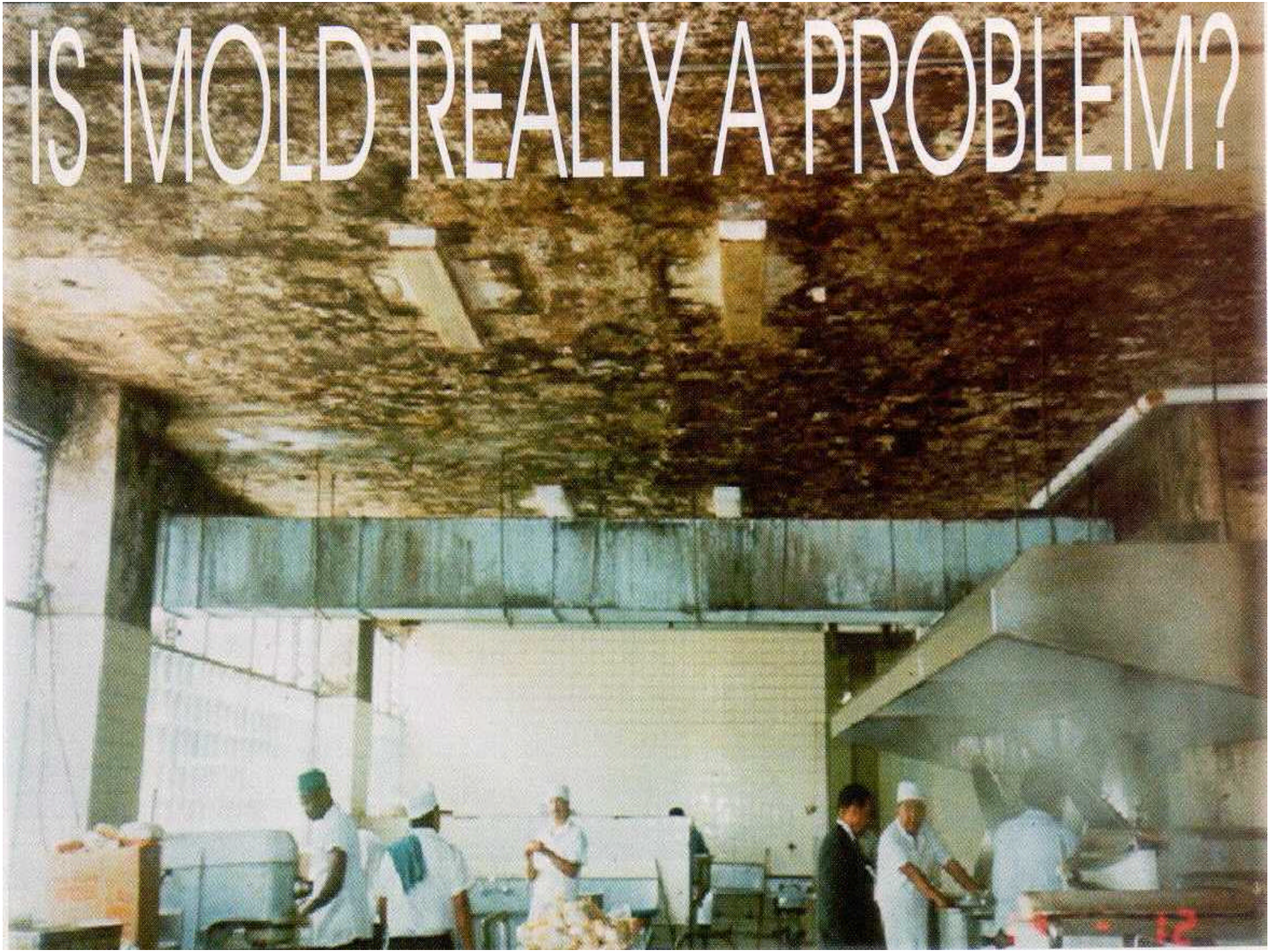


IAQ: EPA Tools for Schools

Accessible through the EPA Region 6 Home page.

http://www.epa.gov/region6/

IS MOLD REALLY A PROBLEM?



Case 1
Allergy to mold in a school

6 y/o asthmatic boy with inhalant allergy to molds became symptomatic when exercising in the school gym, despite maximum medical management of asthma

Case 1

Environmental investigation by the Texas Association of School Boards (TASB) revealed “high” levels of mold in the gym due to inadequate drainage

Case 1

- Allergist contacted SW-CPEH - school refused to excuse the child from PE in the gym unless child was disabled under “Section 504”
  - “Section 504” is determined by a school committee; school does not get additional funds but can make reasonable accommodations for these students

Allergen in a school
Who pays?

- Voluntary guidelines for IAQ in schools: TDH, EPA (Tools for Schools)
- Limited funds in small, rural schools
- Engineering change vs. accommodations
- Ethical considerations - Providing medical information to the school's disability committee

Stachybotrys: Health effects

- May produce several mycotoxins, including trichothecenes
- Myriad of health effects suggested in case reports and case-control studies (the Cleveland cluster)
- Animals models: Illness from ingestion, not inhalation
- No proven health risk, except allergy, which may be from mixture of molds

Case 2
Dirty air in a middle school

13 y/o honors student began experiencing headache, eye irritation, congestion, and shortness of breath at school. Occasional throat tightness and significant rashes.

Case 2

- Symptoms occurred only at school - not at home, at the mall, on weekends, or on vacations.

- Escalating symptoms required patient to stay home for 6 weeks with the school paying for a daily home tutor.

Case 2

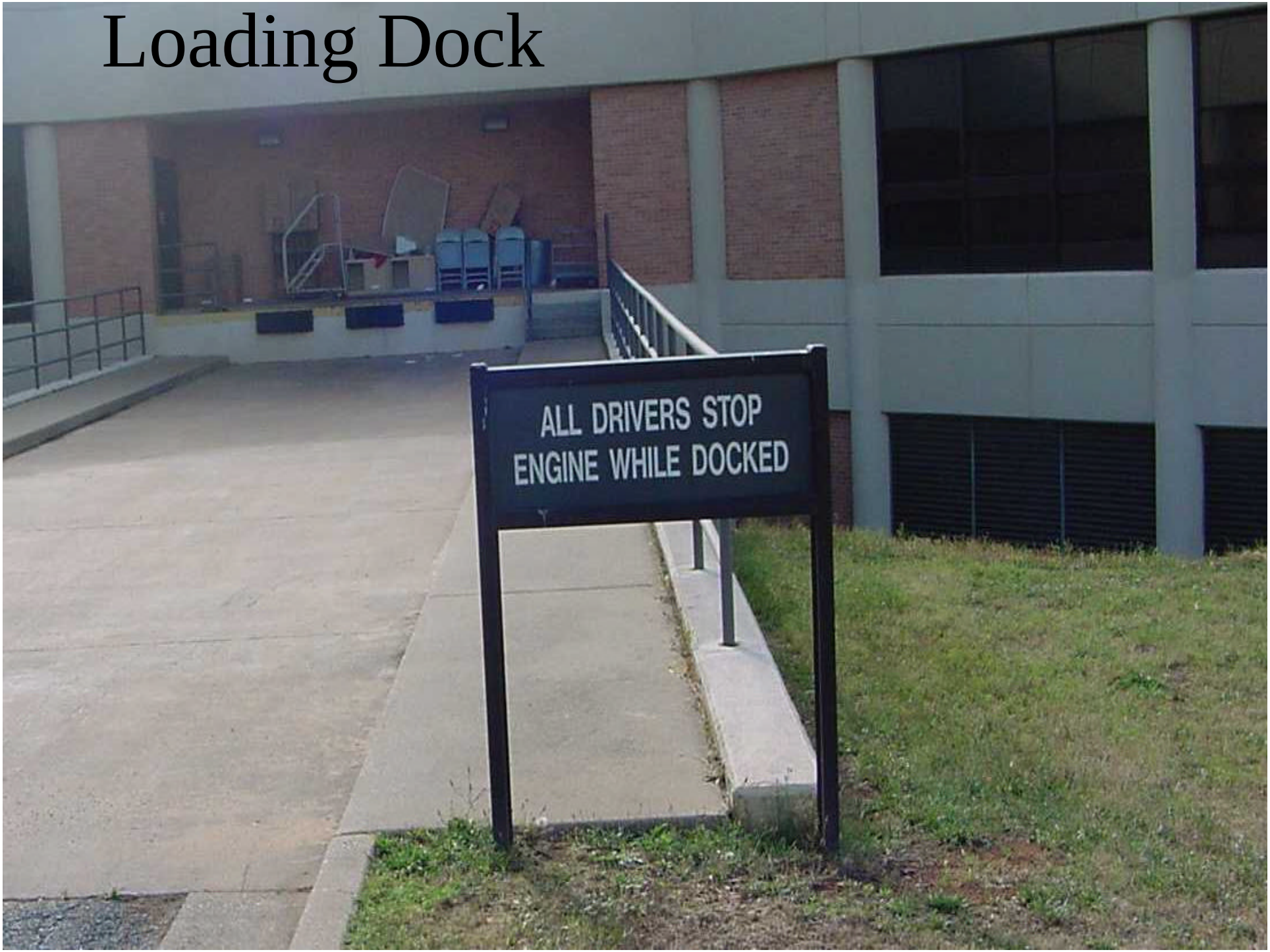
- Other students and teachers had similar complaints; principal missed school for 2 weeks for unknown illness, possibly related to air at school

- Allergy work-up and symptomatic meds for index patient- not helpful

Case 2

- HVAC engineering firm discovered fresh air intake shutters on the roof near the air exhaust vents for school
- Patient transferred to a new school and returned to baseline functional status
- Indoor air investigation, re-engineering, and evaluation of other students continues

Loading Dock



Students with cough & eye irritation

- Catholic school with 610 students and 50 teachers, apx. - 45 students and 15 teachers visited the school nurse over a 2-week period complaining of cough and irritated, teary eyes.
- Symptoms worse at school, resolved immediately after leaving school bldg.

Case 3

- School principal discovered Aquachem, a chlorine product for pools, had been placed in moldy drip pans of the school's air conditioner
- A one-time treatment - any residual tablets removed after about 10 days
- Day 14: Principal contacted poison center

Sequelae of an irritant exposure

- Outcome: School evacuated, comprehensive air sampling, school sued the church
- Second wave of PC calls: Could spastic colon and other diagnoses be related to the indoor air at the school?
- Was the mold or chlorine product the primary problem?

Contact us for
Educational presentations
Telephone consultations

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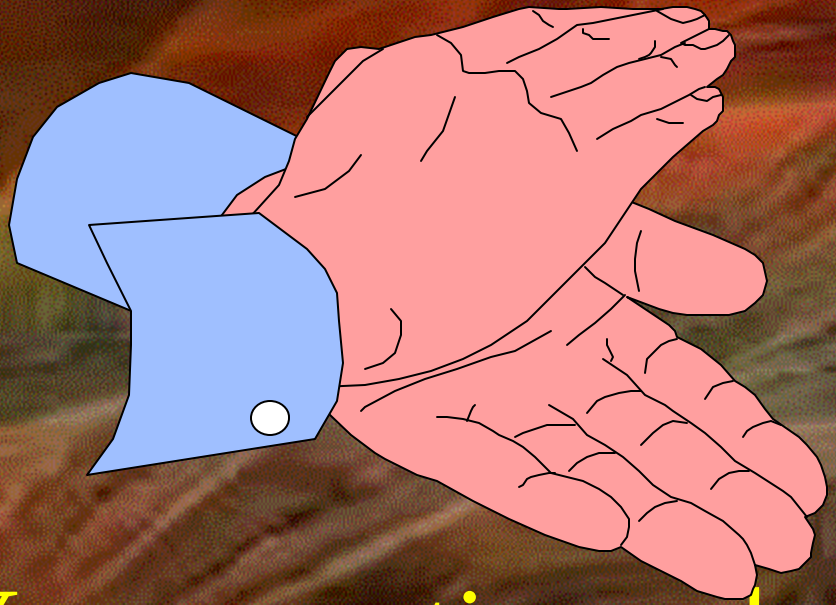
- Fax: 903 877-7982

Thank you



Your questions please